

ABSTRACT

Systems, methods and computer-readable mediums are provided for improving and controlling uniformity of resistance (RS) of metal line, e.g., copper, conductivity in semiconductor processing. In-line or integrated metrology and data feedback and/or feed-forward may be used for monitoring and adjusting the chemical mechanical planarization (CMP) process. Measurements are obtained of deposition layer thickness after the chemical vapor deposition (CVD) process, and of the copper trench profile, including depth, top critical dimension, and bottom critical dimension, following the Etch process. The trench profile measurements are used as feed forward information, together with the CVD measurement, in adjusting the removal rate at the CMP to leave an acceptable amount of material in the copper cross section in the semiconductor product, so that a target resistance is attained.